

only species I have ever observed in Middle Tennessee. I found it sparingly and confined to a limited belt of hills around the confluence of the Harpeth and Turnbull Rivers, in Dickson County." This is the very region where we found the white pines, which, from the gravels of Turnbull River, could be seen silhouetted against the sky at the summit of the almost inaccessible bluffs; whereas the more abundant scrub pines were found in the low-lying, sterile soils between the river and Craggie Hope. We also observed *Pinus virginiana* in the oak barrens toward White Bluffs, in Dickson County, a few miles to the northwest. However, the white pine must be of extremely limited occurrence in this region. An ascent of the bluffs showed that it grew rather sparsely on the rich well-drained slope at the summit of the bluffs, several of the mature trees, however, producing cones. Close to the bank of Turnbull River, shaded by the high cliffs, were *Waldsteinia fragarioides*, and *Equisetum hyemale* var. *intermedium*. These are reported by Gattinger only from the Alleghenies, and the entire locality has the appearance of a fragment of the northern Alleghenian forest, isolated in Middle Tennessee. Further exploration was prevented by darkness. Specimens of the plants are in the Gray Herbarium.

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THE NAME SISYMBRIUM.

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THE genus *Sisymbrium* was described by Linnaeus as follows in the 5th edition of the *Genera Plantarum*, p. 296, published in 1754:

"728. SISYMBRIUM. * *Tournef.* 109. *Radicula Dill. gen.* 6.

"CAL. *Perianthium* tetraphyllum: *foliolis* lanceolato-linearibus, patentiusculis, coloratis, deciduis.

"COR. tetrapetala, cruciformis. *Petala* oblonga, erecto-patentia, calyce saepius minora, unguibus minimis.

"STAM. *Filamenta* sex, calyce longiora: quorum *duo opposita* paulo breviora. *Antherae* simplices.

"PIST. *Germen* oblongum, filiforme. *Stylus* vix ullus. *Stigma* obtusum.

"PER. *Siliqua* longa, incurva, [gibba,] teres, bilocularis, bivalvis: *valvulis* dissepimento paulo brevioribus.

"SEM. plurima, parva.

"OBS. *Sophia corollam calyce breviorē gerit, & siliquam tenuissimam longissimam.*

"Radiculae D. *siliquam gibbam brevissimam proferunt [uti 1. 2. 3.].*

"*Calyx & Corolla in hoc genere patentia.*"

The bracketed words were not in the 1st edition published in 1737 or in the 3rd edition published in 1743 (see page 247). In those editions Linnaeus also had an immaterial observation about *Eruca* which he later omitted.

In the first edition of the *Species Plantarum* (pp. 657–660) published in 1753, the species of *Sisymbrium* listed by Linnaeus were (1) *Nasturium* [aquatic¹] *um*; (2) *sylvestre*; (3) *amphibium* α *palustre*, β *aquaticum*, δ *sylvestre*; (4) *supinum*; (5) *polyceratum*; (6) *murale*; (7) *vimineum*; (8) *arenosum*; (9) *monense*; (10) *asperum*; (11) *Sophia*; (12) *tanacetifolium*; (13) *altissimum*; (14) *Irio*; (15) *strictissimum*; (16) *integrifolium*.

In arriving at the proper use of the name *Sisymbrium* it is believed that the following points should be considered:

(1) In the *Genera Plantarum* Linnaeus gives references to Tournefort under a vast majority of the generic names proposed by him. These references are not to the descriptions of Tournefort, but to his plates. The plates are excellent and carefully prepared detail drawings. In other words, what Linnaeus did with most of his genera was to cite a definite excellent illustration showing exactly what he had in mind. Where he had any doubts whether the way in which Tournefort used a generic name in an illustration was the way in which he himself wished to use it he omitted the reference. For example, Tournefort (pl. 298) has a fine illustration of *Chaetochloa* as *Panicum*, but Linnaeus does not cite this at all.

In the case of *Sisymbrium* the Linnaean reference is to Tournefort's plate 109. This is an excellent detail illustration of the water cress, *Sisymbrium Nasturtium*.

(2) It will be noted that Linnaeus in his generic description says "*siliqua longa.*" He treated species with siliques "*longissima*" or "*brevissima*" as belonging to the genus *Sisymbrium*, but he self-evidently did not regard either as typical, because he made special observation about each.

¹ According to the custom of the period, Linnaeus here indicated "aquatic" by an equilateral triangle.

His generic description applies directly to the water cress, and not to such a species as *Sisymbrium altissimum*, which has very long pods.

(3) Special attention has been called to his language "*Radiculae* D. *siliquam gibbam brevissimam proferunt, uti 1, 2, 3*" and the argument has been advanced that as "1" evidently refers to the first species treated by him in *Species Plantarum* (namely the water cress) he by this language intended to indicate that this species was not typical. The following facts about this argument were not however noted by those who advanced the argument.

(a) The water cress does not have siliques which anyone would ever think of describing as "*brevissimam*."

(b) Dillenius, from whom the name *Radicula* is cited, treated the water cress as a *Sisymbrium* (Cat. Pl. Gus. 169). His illustration of *Radicula* (plate 6, opposite p. 124 l. c.) cited by Linnaeus is an excellent one of one of the plants we now call *Radicula*, and it has siliques which everyone would at once characterize as "*brevissimam*."

(c) Linnaeus turned out a great deal of work in a hurry and there are many typographical errors in some of his works. He complained of the "carelessness as to corrections" of his printers (Jackson's Life of Linnaeus p. 299); and I am very sure that the views of his printers concerning the manuscript he furnished them would have been most interesting if they had been preserved.

The first edition of the *Species Plantarum* and its companion volume, the fifth edition of the *Genera Plantarum*, show in various places unmistakable evidence of this haste. Some of the errors which crept in Linnaeus corrected in subsequent editions, and one of the errors so corrected by him deals with the very words we are now considering.

In other words, in the sixth edition of the *Genera Plantarum* (p. 338) published in 1764 Linnaeus changed these words to read "*uti 4, 5*"; and in its companion volume, the third edition of the *Species Plantarum*, we note (p. 916-7) that species 4 and 5 are species 2 and 3 of the first edition and that species 1 of both editions (the water cress) was omitted from the statement. In other words Linnaeus did not regard the water cress as one of the species to which his remarks about *Radicula* were applicable.

(4) Hill in the *British Herbal* (p. 245) published in 1756 seems to have been the first reviser of the Linnaean conception of *Sisym-*

brium. He confined the name *Sisymbrium* to the water cresses, saying, Linnaeus "very improperly joins with the water-cresses many plants not allied to them; these we shall give under other regular genera, and in their proper places." Accordingly he assigned some Linnaean species of *Sisymbrium* to *Radicula* (p. 264-5); species 11 (*Sophia*), species 14 (*Irio*) and species 15 (*strictissimum*) he assigned to *Erysimum* (p. 251). To the genus *Eruca* (p. 237) he assigned species 9 (*monense*) and 6 (*murale*).

(5) The next reviser was Adanson in 1763 (*Fam. Pl.* 2: 417). He also confined the name *Sisymbrium* to the water cresses, specifically citing Tournefort's plate 109; and he divided other Linnaean species of *Sisymbrium* among the genera *Kibera* Adans., *Roripa* Scop., *Sophia* Dod, and *Norta* Adans., assigning to these genera respectively the Linnaean species of *Sisymbrium* numbered 4, 3, 11 and 15 and in addition No. 10 to *Roripa*.

(6) The sixteen species given by Linnaeus are now referred to anywhere from nine to eleven different genera. *Radicula* and *Norta* (*Sisymbrium* of various authors) have practically the same number, the exact number depending on the disposition of certain species, which widely varies with different authors.

(7) The name *Sisymbrium* is a very old one. Some of the earlier botanists used it both for species of *Mentha* and for the water cress. Thus in Matthiolus *Commentarii x x Dioscorides* (p. 292 Italian ed. of 1560; p. 487 ed. of 1565) we find an excellent illustration of the water cress as *Sisymbrium aquaticum*, while on pages 485-6 (last cited edition) we find equally excellent illustrations of two mints, one labeled *Sisymbrium hortense* and the other *Sisymbrium sylvestre*. The use of the name for the mints seems to have soon died out, but the use of the name for species of *Cruciferae* continued. The old authors had just as much trouble in applying names to species of *Cruciferae* as modern authors, and one can find various species assigned to the genus by different authors, but as far as I have seen all authors who used the name at all cited the water cress as one of the species of the genus.

Summing up, the plate of *Sisymbrium* cited by Linnaeus illustrates the water cress; his generic description best applies to the water cress of any of the species given by him; the historic name of the water cress is *Sisymbrium*; the first revisers of the Linnaean genus, Hill and Adanson, both separately and both very properly, restricted the

name *Sisymbrium* to the water cress and removed the other elements to other genera. Under these circumstances, under all codes of nomenclature the name *Sisymbrium* should now be applied to the water cress.

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TWO NEW EPILOBIUMS OF EASTERN AMERICA.

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IN 1918 I described from the Magdalen Islands and Newfoundland *Epilobium densum* Raf., var. *nesophilum*.¹ At that time the plant was known only in flower and very young fruit. In August, 1924, however, Messrs. Bayard Long, Boyd Dunbar and I were so fortunate as to secure abundant fruiting as well as flowering material in Newfoundland and to collect the very characteristic stolons which had heretofore been inadequately known. The mature seed is quite unlike that of *E. densum* in having only a very short and scarcely obvious collar, the coma appearing to come directly from the summit of the seed; *E. densum* having a more defined neck. Var. *nesophilum*, furthermore, reproduces by filiform stolons which terminate in subglobose tubers, *E. densum* being non-stoloniferous. These, in addition to the characters originally pointed out: the subsimple to slightly branching habit, in contrast with the dense branching of *E. densum*; the commonly broader leaves; the calyx 4.5–7 mm. long, contrasted with the shorter calyx (3–4.3 mm. long) of *E. densum*; and the large petals (7.5–10 mm. long) contrasted with the small petals (4.2–6.5 mm. long); abundantly distinguish the Magdalen Island and Newfoundland plant from the continental *E. densum* and I now have no hesitation in treating it as

EPILOBIUM **nesophilum** (Fernald) n. comb. *E. densum*, var. *nesophilum* Fernald, RHODORA, xx. 29 (1918).

From *E. palustre*, *E. nesophilum* is quickly distinguished by the close cinereous puberulence of the foliage, the short pedicels, the erect buds with submucronate tips as in *E. densum* and the very large petals; and in large plants the prolonging inflorescences have a strikingly unilateral or scorpioid tendency which is not common in *E. palustre* and I have never seen in *E. densum*.

¹ Fernald, RHODORA, xx. 29 (1918).